

Remarks

Claims 1-2 and 4, 6, 9-21 are in the case. Claims 1-2, 10-12, 14, and 16-20 have been allowed.

In reviewing the claims, applicant noticed a double claiming issue with regard to claims 13, 15, and 21, due to a clerical error (undersigned neglected to incorporate intended changes to the claim dependencies when the claims were finalized for filing). Claims 13, 15 and 21 now depend directly or indirectly from allowable claim 1, and are therefore believed to be in a condition for allowance.

Claim 4 has been amended to incorporate the limitations of claims 5, 7 and 8. Claim 5 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert et al. in view of Duncan et al. (US. Pat. No.5, 133,771). Applicant requests reconsideration on grounds that the Duncan reference teaches away from the claimed combination and that the cited references fail to suggest the claimed combination.

Applicant's specification explains why the thin walled configuration of applicant's cup provides an improvement over the prior art:

The recesses 20 are open along the peripheral end surface and the outer surface of body 12, and the body 12 being thin-walled minimizes the size of the cavity required to be formed in the acetabulum for a body of given articular surface area.

(¶52 of the published application).

As noted by the Examiner, Gilbert does not disclose the specific thickness of the acetabular cup. The drawings in Gilbert show a very thick walled cup that is intended for use with a small diameter femoral head. For a small sized femoral head implant, a thick walled cup is advantageous because it is strong and fills space, yet the thick wall does not prevent the outer diameter of the cup from being sized to minimize the amount of bone that must be removed from the patient's acetabulum. Small size femoral head implants often use two part cups (such as the embodiment shown in the Gilbert drawings) which have a shell that press-fit or cemented into the acetabular bone and a cup insert that snap fits into the shell. In contrast, the cups shown in the drawings of applicant's specification are used with large diameter femoral heads. For large diameter femoral heads, the thickness of the cup is important because, as mentioned in applicant's specification, a thin walled cup minimizes the amount of bone that has to be removed from the patient's acetabulum.

The Examiner notes that Duncan et al. teaches the specific thickness of the acetabular cup as being between 3-6 mm in col. 5, line 54 through col. 6, line 14 for the purpose of incorporating a thickness range that will typically optimize the amount of adhesive needed for the prosthetic and minimize the amount of hardware for the average patient. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify the thickness of the acetabular cup as being between 3-6 mm in order to incorporate a thickness range that will optimize the amount of adhesive needed for the prosthetic and minimize the amount of hardware.

Applicant suggests that Duncan is describing a significantly different type of cup, and that Duncan's description of the cup in fact teaches away from the configuration of claim 4. Duncan is directed primarily to ways of providing temporary implants during the treatment of infections. Duncan specifically explains that the thin walled cup is intended for use as a "temporary prosthesis" in which the function of the bone cement "is to serve as a carrier for an antibiotic and to *temporarily seat* the femoral component . . ." (Duncan, Col. 5, lines 64-66; emphasis added). In contrast, applicant's claim 4 is directed to a unibody cup that is configured for fixation via bone in-growth, not by bone cement. Duncan goes on to explain that:

Thus, in this application, the metal components are not as heavy or as big. The amount of bone cement has been optimized and the amount of hardware has been minimized whereas with the permanent prosthesis, the emphasis is the other way around. The emphasis [of permanent prostheses] is on strength and durability of the hardware. Thus, in optimizing the amount of bone cement and minimizing the amount of hardware, the circumference of the stem portion 14 at its proximal end 16 is preferably not more than about 50 mm . . . Likewise, the thickness of the acetabular cup 60 is preferably not more than about 5 mm.

(Duncan, Col. 5, line 66-Col. 6, line 14). Thus, Duncan teaches away from the claimed invention by teaching that permanent prostheses maximize the amount of hardware in order to increase the strength and durability of the hardware. In view of this teaching, there would be no motivation to modify the thick walled cup of Gilbert.

As discussed in applicant's previous response, the present invention improves over the previously cited Amstutz reference (which is owned by applicant) by allowing the acetabular component of the present invention to have a substantially thinner wall. Despite the substantially thinner wall, the cup of the invention still adequately connects to an insertion and extraction instrument. The Gilbert cup is significantly different because it has a very thick wall. Nothing in

Gilbert appears to suggest narrowing the thickness of the cup, nor how this might be accomplished without sacrificing a stable connection with a detachable insertion and extraction instrument. Duncan fails to provide such a teaching because, although Duncan discloses the use of a thin walled cup, Duncan specifically states that an object of the Duncan temporary cup is to maximize the amount of bone cement and minimize the size of the temporary cup. As such, it is respectfully suggested that the cited references teach away from the claimed invention and fail to suggest the claimed combination.

Conclusion

Applicant suggests the claims are now in a condition for allowance. This response has been filed with a petition for a one month extension of time. It is believed that no further extensions of time are required, but if an extension is required, applicant hereby requests an appropriate extension of time. It is further believed that no fees are due, but if any fees or credits are due, the Commissioner is authorized to charge or deposit them to Deposit Account No. 502795.

Respectfully submitted,

/Shawn D. Sentilles/

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